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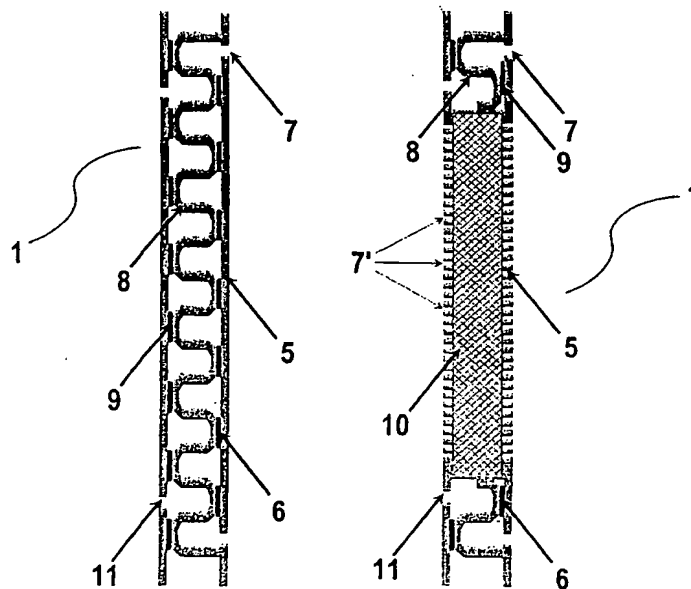


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(57) Abstract: It is described a bipolar separator for polymer membrane fuel cell stacks, delimited by two sheets provided with fluid passage holes connected by means of a corrugated element and comprising a passage section for a thermostating liquid, which allows to achieve the withdrawal of heat from the adjacent cells and the humidification and distribution of gases with a single integrated piece, simplifying the assembly and the hydraulic sealing of the stack.